

1)

Submitted on

April 19, 2012 by A. Tymes

Comments

3.15 reads, "There should be no radioactive materials used in the launch vehicle or spacecraft(s). A written statement that no radioactive materials are being used shall be provided to the launch site operator 30 days prior to the arrival of the radioactive materials." Why send a statement that no radioactives will be used if there will be radioactives? Isn't the statement unnecessary because radioactives will never be arriving anyway?

2)

Submitted on

April 19, 2012 by G. Herbert

Comments

I have two specific comments, both of which I raised at the California events but would like to reiterate here...

Re sect 3.8, the sea launch option "From US territorial waters" is a problem in two ways. One, the safety of offshore launch increases the further you move offshore. A launcher whose first stage physically can't reach land or near-shore sea lanes inherently has safety and regulatory approval advantages. Second, the phrasing of the air launch option does not require launch from US airspace, only takeoff from US airports.

A symmetrical restriction for air and sea would be something like "must depart from a US airport or port, and may launch from (wherever, international waters, or within the US EEZ / 200 NM limit - pick one of those).

Anywhere offshore would be the best solution. 200+ miles offshore may be the safest available option.

Two, the 2014 time limit is going to be very challenging. If the government contract associated with this is that limiting, it may mean that the prize isn't awarded, though I understand if NASA or Space Florida can't change that.

Thank you!

3)

Submitted on

April 19, 2012 by P. Breed

Comments

Two comments:

Paragraph 3.15 seems to have a cut and paste problem. Intent is clear , paragraph is wrong.

P3.8

The definition of U.S. territorial waters is unclear, does this mean the 12mi limit or the 200mi exclusive economic zone? As written I think it means the 12 mi limit. If air launched does not have to stay within U.S. territorial waters why make the boat do so?

I'd prefer to see the restriction in 3.8 redone as follows:

Any air or sea going vehicle used for a launch platform must depart from U.S. territory and return to U.S territory without visiting any other sovereign territory. This would allow me to say depart from Florida and head out past the Caribbean islands to have a clear shot down the Atlantic between South America and Africa. From a range safety standpoint the 12 mile limit is really quite restrictive.

PaulAKA Unreasonable Rocket.

4)

Submitted on

April 19, 2012 by G. Herbert

Comments

Regarding:

9.3 Each Team must sign a hold-harmless agreement that dismisses any responsibility of SFSSRC, Challenge judges, FUNDERS, and the U.S. Government and its related entities for any liability

This section appears to attempt to - or accidentally - override the US Government statutory liability for any damage that is caused during flight that exceeds the launcher's Maximum Probable Loss value / insurance coverage that's required for the launch permit.

I believe that provision is written in to US law.

I can understand an indemnify / hold harmless related to the prize activity, but that can't override the launch licensing regulations and law. You need to separate those out and make it clear you're not trying to override the government liability coverage over MPL.

If you DO intend to void the US government liability beyond the MPL, I believe the proposed rules may be illegal, and I urge you to review that with an attorney... And I doubt anyone will sign up for the contest under those conditions. MPL and the launch licensing are carefully thought out national policy to encourage reasonably safe spaceflight...

5)

Submitted on

April 21, 2012 by B. Sprague

Comments

We are in process of forming our team to enter this competition, and will be submitting comments to the draft documents provided herein. Please consider us as a definite entry.

6)

Submitted on

April 23, 2012 by A. Petro

Comments

3.9 Each Challenge Launch Attempt must receive applicable regulatory approvals from Federal Aviation Agency (FAA) Office of Commercial Space Transportation (CST) and any other Aviation Administration

3.15 There should be no radioactive materials used in the launch vehicle or spacecraft(s). A written statement that no radioactive materials are being used shall be provided to the launch site operator 30 days prior to the arrival of the radioactive materials.

This does not make sense.

7.1.1 A Challenge prize of \$ 1.5 million will be provided by NASA to the first Team that accomplishes the task of launching a Nano-Satellite into Earth orbit twice within seven consecutive days in compliance with the Challenge rules.

7.1.2 A second Challenge prize of \$1 million will be provided by NASA to the next Team that accomplishes the task of launching a Nano-Satellite into orbit twice within seven consecutive days by a different launch system (for example, air launch versus ground launch) in compliance with the Challenge rules.

7.1.3 A Challenge prize of \$500,000 will be provided by NASA to the second Team that accomplishes the task of launching a Nano-Satellite into Earth orbit twice within seven consecutive days using either launch system in compliance with the Challenge rules.

This sounds to me like the same team could win both 7.1.2 and 7.1.3 which I don't think is intended, or is it?

7)

Submitted on

April 27, 2012 by J. Chancery

Comments

I understand you need some entry fee to keep the rabble out. But \$10,000 seems a bit extreme. Especially when compared to other NASA challenge competitions like the Sample Return Robot Challenge (\$3,000) and the Night Rover Challenge (\$2,000). I suggest a \$5,000 entry fee for this Challenge.

8)

Submitted on

May 01, 2012 by G. B.

Comments

1.3 To win the Challenge, a Team's Nano-Satellites (at least one per successful Challenge Launch Attempt within seven consecutive days) must each achieve at least one full, verifiable orbit of the Earth from the point of release from the Launch Vehicle. Any orbital inclination will be acceptable in Low Earth Orbit, as long as it is the intended orbit for the Challenge Launch Attempt. The maximum orbital perigee shall be 2000 kilometers. Shouldn't that be apogee instead of perigee.

9)

Submitted on

May 04, 2012 by T. Vincent

Comments

The following is my feedback for the Draft Challenge Rules v2.0:** CR = Challenge Rules (v2.0)** TA = Team Agreement (current version)-----CR.1.3 "one full, verifiable orbit of the Earth from the point of release from the Launch Vehicle" ... Perhaps adding "entirely above the Karman Line (100 km)" might be useful.CR 1.3 "in Low Earth Orbit ... The maximum orbital perigee shall be 2000 kilometers." As this is referring to LEO, I assume "perigee" was meant to be "apogee".CR 1.5"A letter of compliance or exemption from AST must be provided to SFSSRC prior to officially scheduling any Challenge Launch Attempt." Would an AST Launch License be sufficient to cover this requirement? (idea from Ben Brockert on aRocket)CR 2.1"They may be launched from the ground, water, carrier aircraft, balloon systems, or suborbital spacecraft." This list appears to be thoroughly inclusive. However, is anything being intentionally excluded from this list? (idea from Ben Brockert on aRocket)CR 2.2"Launch Vehicles ... must not be manufactured with substantial investment from the U.S. Government or any foreign government. This refers to government money being used to produce (manufacture) the actual Launch Vehicle(s) used for this Challenge. What about a "substantial investment" of government money being used for R&D and producing development/learning/test Launch Vehicles? While that government money might not go directly into producing the actual Challenge Launch Vehicle(s), the knowledge produced from that government money would go into producing (manufacturing) the actual Challenge Launch Vehicle(s). Isn't this the same thing?CR 2.2"This does not apply to any aircraft or other conveyance used to air-launch the Launch Vehicles." What about vehicles used to sea-launch the Launch Vehicles?CR 3.4"SFSSRC will allow only one shift of this nature for each Team's Window of Opportunity." If a Team requires more than one Window of Opportunity to complete the Challenge, is one "shift" allowed per Window of Opportunity? Or, only one "shift" allowed per Team for the entire Challenge?CR 3.4"To accommodate weather or technical contingencies ... SFSSRC may shift a Team's assigned two-week Window of Opportunity by up to one week before or after (but contiguous to) the original scheduled Window of Opportunity. ... These shifts may not be possible if another Team's Window of Opportunity would be encroached at the same launch site". So, this means Windows of Opportunity for different Teams at any given launch site must be scheduled with at least a two week period between them? Thus, allowing each Window of Opportunity enough margin to shift by one week?CR 3.8"Challenge Launch Attempts may occur from any site in the United States. In the case of air launches, the carrier vehicles must take off from U.S. soil. In the case of offshore (ocean platform) launches, the vehicles must be processed on U.S. soil and be launched from U.S. territorial waters." I agree entirely with the comments that George Herbert and Paul Breed submitted on this on 19 April 2012. I had the same reaction they did to this. The farther offshore a launch happens, the greater the safety margin. Also, the air-launch and sea-launch are not comparable as the air-launch does not have to happen in US airspace. Simply specifying that the air-launch platform or sea-launch platform must, itself, be launched

from US territory seems sufficient -- provided the actual rocket launch occurs in US or International (not foreign) waters and/or air-space. CR 3.9 "Federal Aviation Agency (FAA)" ... perhaps "Federal Aviation Administration" would work better here. CR 3.9 "Office of Commercial Space Transportation (CST)" ... I believe they use "AST" as their abbreviation, not "CST". I am not aware of the reason for this. CR 3.13 "All launches shall comply with the U.S. Government Orbital Debris Standards Mitigation Practices (<http://orbitaldebris.jsc.nasa.gov/library/USGODStandardPractices.pdf>)". This link does not work. You may want to list one of these other links instead ...

<http://orbitaldebris.jsc.nasa.gov/mitigate/mitigation.html> ... or ...

<http://orbitaldebris.jsc.nasa.gov/mitigate/technicalstandard.html> CR 3.14 "Should any launched item exceed 250km in perigee, the Team shall coordinate with the launch site/range to have a Collision on Launch Assessment (COLA) performed and approved per the launch site requirements. The COLA is done to ensure the spacecraft maintains a safe distance from the International Space Station." Again, I believe "perigee" was meant to be "apogee". CR 3.15 "There should be no radioactive materials used in the launch vehicle or spacecraft(s). A written statement that no radioactive materials are being used shall be provided to the launch site operator 30 days prior to the arrival of the radioactive materials." As other commenters have pointed out, this regulation is inconsistent. CR 4.8 "Team Members may not be Federal employees acting within the scope of their employment". How about Federal contractors? My understanding is that much, if not most, of the rocket design, building, and launching funded by the US government has actually been done by individual contractors that work for contracting organizations. CR 4.9 "Anyone can enter the Challenge, but only U.S. citizens, businesses, or permanent residents can win the prize purses. To be eligible to win a Challenge prize, an individual or entity, a) in the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and b) in the case of an individual, whether participating individually or as a member of a group, shall be a citizen or permanent resident of the United States. Additional details are provided in the Team Agreement." I have not yet waded into the Team Agreement, but this does bring up a question (that may or may not be answered in the Team Agreement). That is, "If a Team contains one or more Team Members (either individual or organization) that do not fit this regulation, is that entire Team ineligible to receive prize money? Or, is it only the non-qualifying Team Members of the Team who are ineligible to receive prize money?" CR 5.3 "Teams may not accept technical or logistical assistance from U.S. Government agencies, beyond those services normally required or provided in support of a launch operation and to protect government property and ensure safety." This refers to US government agencies -- organizations. How about receiving "technical or logistical assistance" from individuals -- US government employees or contractors (off-hours, when they are on their own time)? CR 6.1 "Team registration will begin on July 1, 2012 and continue until November 1, 2014." This conflicts with <http://challenge.gov/NASA/49-nano-satellite-launch-challenge> which states ... "Submission Period: Start: Jun 01, 2012 12:00 AM EDT End: Jun 01, 2013 10:00 PM EDT" ... and ... "Winners announced: Jul 01, 2013 10:00 PM EDT" CR 6.1 "Team registration will begin on July 1, 2012 and continue until November 1, 2014." Keeping registration open right up until the end of the Challenge is good. Competitions that create an artificial cut-off date for registration, that is substantially before the end of their competition, undercut their own objectives. CR 6.2 "The registration fee for each team is \$10,000 until December 1, 2012." This is too much. \$1000 is sufficiently high to keep out non-serious competitors. Anything higher than that simply takes time and resources away from competitors that could go towards them achieving the competition's objectives.

There are a number of talented and motivated people out there that would love to take part in this Challenge, who are already underfunded. You can help them by making the barriers to entry as low as possible, and then allowing "survival of the fittest" to see who can be successful. A second benefit of this approach -- even for competitors who are too underfunded to win this Challenge -- is that simply allowing them to officially compete enables them to build a base of people, knowledge, equipment, and contacts that can be leveraged in future space-related competitions and companies. An example of this was the CATS "Cheap Access To Space" Prize that inspired the creation of both JP Aerospace and Armadillo Aerospace. Making Teams spend extra time and energy on raising money, simply to pay administrative fees, undermines the objectives of the Challenge. If this money is needed to run the Challenge, then trim down the prize money slightly and use that to fund the administrative costs. Don't knock Teams out of the competition before they can even start.

CR 6.2 "After December 1, 2012, the registration fee for each team is \$20,000." Besides all the comments from above being applicable, it also doesn't make sense to double the entry fee. Anyone who is serious is going to enter as soon as they are able. There doesn't need to be a "discount" offered to sign up sooner. Keeping a single entry fee for the full duration of the registration period is reasonable and appropriate. Additionally, this yet again excessively penalizes underfunded Teams. If the goal of the Challenge is to "bring forth innovations", then everything about the Challenge should be geared towards achieving that objective -- including not undercutting potential Competitors that can bring forth innovations, even if they are underfunded. Just because a competitor may have trouble coming up with the full amount of funding to successfully complete in this Challenge, does not mean they do not have useful innovations to offer. Simply allowing them to be an Official Competitor allows them the possibility of being taken seriously -- which could lead to multiple beneficial outcomes, including several underfunded Competitors joining forces, an underfunded Competitor joining a more well-funded Team (because they have something the better funded Team needs), or an underfunded competitor being noticed by outside Sponsors and getting the funding they need. Without smaller, underfunded Competitors being allowed in the competition, none of that is going to happen. Be smart about how you set up this Challenge and it could catalyze positive changes in the Alt Space community that could deliver benefits both during the Challenge and well after the Challenge has ended.

CR 6.4 "The deadline for Teams to win the Challenge is December 31, 2014. If no Team is able to win the Challenge by that date, the Challenge will be declared "expired"." This is too short of a timeframe. No one has put something in orbit in that short of a timeframe -- not the US, not the Soviet Union, not anybody. Even SpaceX -- the new poster child for relatively fast and inexpensive development of space technology -- took 5 or 6 years to successfully get a rocket into Earth orbit. It is unlikely anyone else is going to do it faster than that. If SFSSRC and/or NASA do not have the authority to extend the timeframe of the Challenge, then please let us know who does have that authority -- so we can contact them directly.

CR 7.1.2 "A second Challenge prize of \$1 million will be provided by NASA to the next Team that accomplishes the task". As A. Petro alluded to in her/his comments submitted 23 April 2012, "second Team" may work better than "next Team".

CR 7.1.2 "by a different launch system (for example, air launch versus ground launch)". This is confusing. Why was this part added to 7.1.2? Does it mean the Team that wins 7.1.1 can also win 7.1.2 simply using a different launch platform (air-launch instead of ground-launch)? Or, does it mean a Team needs to use one launch platform for their first launch (ground-launch), and a different launch platform for their second launch (air-launch)? I'm not seeing a reason for this to be in here at all. Awarding one Team two prizes does not spread the wealth

enough. If a Team wins 7.1.1, they should be ineligible to win 7.1.2 or 7.1.3. CR 7.1.3 "A Challenge prize of \$500,000 will be provided by NASA to the second Team that accomplishes the task". As A. Petro alluded to in her/his comments submitted 23 April 2012, "second Team" should be replaced with "third Team". CR 7.1.3 "using either launch system". This also is confusing. It is not clear what this means, nor is it clear why it is being included at all. Awarding one Team two prizes does not spread the wealth enough. If a Team wins 7.1.1, they should be ineligible to win 7.1.2 or 7.1.3. CR 7.1.1 It makes the most sense to me to simply duplicate the text of 7.1.1 for both 7.1.2 and 7.1.3, except for the dollar amount and the ordinal number of the Team. For example ...7.1.1 A Challenge prize of \$1.5 million will be provided by NASA to the first Team that accomplishes the task of launching a Nano-Satellite into Earth orbit twice within seven consecutive days in compliance with the Challenge rules. 7.1.2 A Challenge prize of \$1 million will be provided by NASA to the second Team that accomplishes the task of launching a Nano-Satellite into Earth orbit twice within seven consecutive days in compliance with the Challenge rules. 7.1.3 A Challenge prize of \$500,000 will be provided by NASA to the third Team that accomplishes the task of launching a Nano-Satellite into Earth orbit twice within seven consecutive days in compliance with the Challenge rules. CR 9.3 "Each Team must sign a hold-harmless agreement that dismisses any responsibility of SFSSRC, Challenge judges, FUNDERS, and the U.S. Government and its related entities for any liability associated with the Team's pursuit of the Challenge prize purse. There will be no "indemnification" of any sort granted by the U.S. Government or SFSSRC." I agree with George Herbert's comment, from 19 April 2012, that this proposed rule could benefit from further review. CR 10.2 "Non-disclosure agreements with NASA employees are not need to protect company proprietary or confidential business information." The "are not need" part of this sentence is unclear. CR 10.4 "At least one judge must be present ... during any Challenge Launch Attempt". This appears to conflict with CR 3.7 which states, "Two Challenge judges must be present for every Challenge Launch Attempt". -----
Thank you for opening these Proposed Rules up for public comment.

10)

Submitted on

May 07, 2012 by T. Vincent

Comments

This is a follow-up from the comments I submitted on 4 May 2012. I had submitted comments on two places in the Challenge Rules (CR) where "perigee" is used, but it had appeared to me that "apogee" was intended. It appears, however, that I did not explain myself clearly enough as the Space Florida NanoSat Challenge "Weekly Update" email (dated 4 May 2012) contained the following response: "We also understand the comment concerning apogee and perigee, but we believe that we are correct in the use of perigee in defining the maximum closest approach to earth. It can be closer." It is true that perigee can be defined as "the maximum closest approach to earth". However, using "perigee" in CR1.3 and CR3.14 does not appear to make sense. Here is why: -----CR 1.3 "To win the Challenge, a Team's Nano-Satellites (at least one per successful Challenge Launch Attempt within seven consecutive days) must each achieve at least one full, verifiable orbit of the Earth from the point of release from the

Launch Vehicle. Any orbital inclination will be acceptable in Low Earth Orbit, as long as it is the intended orbit for the Challenge Launch Attempt. The maximum orbital perigee shall be 2000 kilometers."First, when I searched for the exact phrase, "maximum orbital perigee", Google returned exactly one response -- this Draft Challenge Rules" document on SpaceFlorida.org. That was it. That is not a phrase normally used.Second, the second sentence of CR 1.3 states that "Any orbital inclination will be acceptable in Low Earth Orbit". Since Low Earth Orbit is defined as ≤ 2000 km, that sets "maximum apogee" at 2000 km.Third, since "space" is generally defined as ≥ 100 km, that sets "minimum perigee" at 100 km.Fourth, the "maximum orbital perigee" on any given orbit is automatically, by definition of "perigee", equal to the "apogee". Obviously, if the perigee becomes greater than the apogee, it is no longer the perigee. So, by following simply logic we can see that "maximum orbital perigee" is 2000km, without it needing to be explicitly listed.Fifth, since "maximum apogee" and "minimum perigee" -- which are actually useful -- are not listed, it is quite strange (and confusing) that "maximum perigee" is listed.It makes sense to define "maximum apogee" and "minimum perigee", but what is the purpose of specifying "maximum perigee"?CR 3.14"Should any launched item exceed 250km in perigee, the Team shall coordinate with the launch site/range to have a Collision on Launch Assessment (COLA) performed and approved per the launch site requirements. The COLA is done to ensure the spacecraft maintains a safe distance from the International Space Station."First, it is unclear if "exceed 250km" in this rule means "greater than 250km" or "less than 250km". Since we are speaking about perigee here, it could be either.Second, for the sake of context, I understand the ISS orbits at an altitude of 330-400 km.Third, if an item launched has a perigee of 200km and an apogee of 400km, its path could clearly intersect with the ISS. However, because its perigee is less than 250km, it would not trigger this rule.That is why I assumed "apogee" should replace "perigee" in this rule, because "perigee" does not make sense and "apogee" is what matters here. -----Thank you, again, for allowing feedback to be submitted on the Draft Challenge Rules.

10)

Submitted on

May 08, 2012 by J. Chancery

Comments

Just reread rule 6.2. \$15,000 fee per Launch Window in addition to the \$10,000 to \$20,000 entry fee is too high. Were there Launch fees of this magnitude associated with the Lunar Lander Challenge? I would assume the judging and administrative costs to be similar to that contest.

11)

Submitted on

May 22, 2012 by H. Karasopoulos

Comments

1. Draft rule 2.2 is unfairly biased towards air launched concepts. "Launch Vehicles may be based on designs developed by or for the U.S. Government or any foreign government, but must not be manufactured with substantial investment from the U.S. Government or any foreign government. "Substantial investment" shall be defined as more than initial phase one SBIR funding or \$150,000 whichever is greater. This does not apply to any aircraft or other conveyance used to air-launch the Launch Vehicles." This draft rule provides a grossly unfair advantage to air launch concepts, and in particular, those where the aircraft may be paid for by the U.S. Government. Since the aircraft is effectively a reusable stage, at least a fair amortization of its cost should be included.
2. Draft rule 6.2 seems somewhat biased against small company's where \$20K represents a significant investment. While a significant entrance fee is reasonable in order to separate the serious from the non-serious participants, why isn't it, say, ~\$5K, especially since your launch scheduling fee is \$15K?3. Why such a short contest? Why not run from 2012 through 2015 or 2016? Thankshk

12)

Submitted on

May 25, 2012 by JAHANGIR

Comments

i am from India, i have very different and advatageous idea than uers can i submit it or can i get help in promoting it.